P527

GENETIC TRANSFORMATION OF SORGHUM (*Sorghum bicolor* L.) BY *Agrobacterium tumefaciens* AND PARTICLE BOMBARDMENT

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A project to obtain transgenic sorghum genotypes with enhanced nutritional quality has been carried out at EMBRAPA Maize and Sorghum, a Brazilian Agricultural Research Corporation. The delta zein, a maize methionine rich protein, under control of gamma zein gene promoter will be expressed in the sorghum endosperm via *Agrobacterium tumefaciens* and/or biolistic with the purpose of increase the protein quality of the grain. The construct of the gamma zein gene promoter directing the delta zein expression was inserted in the pCAMBIA 1303 and 1304 vectors which contain hygromycin resistance gene, GUS and GFP reporter genes. However, one basic premise to obtain transgenic plant is to define the *in vitro* culture conditions necessary for regeneration of sorghum genotypes, then to develop effective biolistic and/or Agrobacterium gene transfer systems. We present here an efficient regeneration protocol for *Sorghum bicolor* and also the initial data obtained after sorghum transformation via biolistic. In the regeneration protocol immature embryos were initially cultured in MS basal medium supplemented with 2 mg/L 2,4-D and 100 mg/L ascorbic acid. 50.88% of calli formed in this medium regenerated in MS basal medium containing 0.5 mg/L BAP and 0.25 mg/L IBA, and were transferred to MS supplemented with 1 mg/L BAP and 2% sucrose to root. Complete plantlets were moved to the greenhouse for evaluation and seed production. Transformation using particle bombardment showed successful transient reporter gene expression. Hygromycin resistant calli are being selected and induced to regenerate transgenic plants. Supported by: CNPq, FINEP/PADCT, FAPEMIG and EMBRAPA